Douglas-Fir Pole and Engraver Beetles

Attack small Douglas-fir trees

Name and Description—Douglas-fir pole beetle—*Pseudohylesinus nebulosus* (LeConte)
Douglas-fir engraver beetle—*Scolytus unispinosus* LeConte
An engraver beetle—*Scolytus monticolae* (Swaine) (= *S. tsugae* [Swaine]) [Coleoptera: Curculionidae: Scolytinae]

Douglas-fir pole and engraver beetles attack small-diameter Douglas-fir trees and tops of larger trees. They are commonly active during droughty periods. The Douglas-fir pole beetle adults are brown, slender, about 1/8 inch (3 mm) long, appear dull due to the dense covering of scales, and have a round posterior. The engraver beetles average less than 1/8 inch (3 mm) long and have a "sawed-off" posterior.

Figure 1. Galleries of Douglas-fir engraver beetle, *Scolytus unispinosus*. *Photo: Wayne Brewer, Auburn University, Bugwood.org.*

Hosts—Douglas-fir is the principal host.

Life Cycle—Depending on the location, Douglas-fir pole beetles and engraver beetles have one to two generations per year. Beetles usually emerge and attack in the spring. A short (1-3 inches [2.5-7.6 cm]), longitudinal egg gallery is constructed in the cambium layer, often with two branches—one up and one down the trunk—originating from the central entrance tunnel. The Douglas-fir engraver beetle gallery can be unbranched, extending in one direction from an enlarged chamber or notch. The galleries of the Douglas-fir engraver beetles (fig.1) can be distinguished from the galleries of Douglas-fir pole beetle (fig. 2) by the well-defined nuptial chamber made by engraver beetles. Larval galleries tend to turn upward and downward depending on if they are above or below the notch. Douglas-fir pole beetle adults overwinter in niches cut into the bark. Douglas-fir engraver beetles overwinter as larvae.

Figure 2. Galleries of Douglas-fir pole beetle, *Pseudohylesinus nebulosus*. *Photo: Karen Ripley, Washington Department of Natural Resources.*

Damage—These beetles cause mortality in smaller trees and top-kill or branch-kill in larger trees, with occasional mortality in larger trees. They also commonly attack thin-barked portions of logging slash. The larvae feed under the bark in the phloem layer. They can be one of several agents that kill a tree. The size of the emergence holes and distinctive galleries distinguish the species from other beetles such as Douglas-fir beetle.

Douglas-fir pole beetles and engraver beetles prefer to attack trees that are injured by fire scorch, defoliation, blowdown, or root disease. Stand conditions and weather can also strongly influence beetle populations. Under drought conditions, they have been known to attack and kill Douglas-fir as large as 12 inches (30 cm) in diameter.

Management—Because Douglas-fir pole beetles and engraver beetles are secondary insects associated with trees under stress, enhancing tree/stand quality will help to prevent attacks. The best management approach is to promote stand vigor by thinning and promptly removing windthrown trees or trees damaged by other stand disturbances.

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2. Furniss, R.L.; Carolin, V.M. 1977. Western forest insects. Misc. Publ. 1339. Washington, DC: U.S. Department of Agriculture, Forest Service. 654 p.